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EXAMINER

EHNE, CHARLES

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,698	<b>Applicant(s)</b> KUMAR ET AL.	
	<b>Examiner</b> CHARLES EHNE	<b>Art Unit</b> 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-14,16-23 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-14,16-23 and 25-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-14, 16-23 and 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Meyer (2002/0188711).

As to claim 1, Meyer discloses a method comprising:

detecting a failure of a first virtualization device of a storage area network interconnect (Page 5, ¶0093 & Table 1, VSX failing component), wherein

said storage area network interconnect is coupled to a metadata host, wherein said metadata host is configured to maintain metadata associated with said first virtualization device, and said metadata host is configured to monitor a heartbeat signal from a plurality of virtualization devices (Page 2, ¶0054, lines 7-9 & Page 8, ¶0138-¶0144);

wherein said first virtualization device is associated with a unique interconnect device identifier (Page 13, ¶0334); and

associating said unique interconnect device identifier with a second virtualization device of said storage area network interconnect in response to said detecting, wherein

said associating comprises modifying said metadata (Page 8, ¶¶0149-¶¶0153 & Page 9, ¶¶0185 & Page 14, ¶¶0356).

As to claim 2, Meyer discloses the method of claim 1 wherein  
said storage area network interconnect is coupled to an application host and to a storage device (Figure 25),  
said first virtualization device is configured to present a virtual storage element to said application host using a host device identifier (Page 2, ¶¶0052, lines 3-12), and  
said virtual storage element comprises at least a portion of said storage device (Page 2, ¶¶0052, lines 4-6).

As to claim 3, Meyer discloses the method of claim 2 wherein  
said second virtualization device is configured to present said virtual storage element to said application host using said host device identifier in response to said associating (Page 14, ¶¶0354-¶¶0356); and  
said second virtualization device is selected from a plurality of virtualization devices (Figure 36A, Page 2, ¶¶0054, lines 1-3).

As to claim 4, Meyer discloses the method of claim 3 wherein said monitoring comprises:  
monitoring a communications link for a heartbeat signal from said first virtualization device via a failover manager (Page 18, ¶¶0503).

5. (Cancelled)

As to claim 6, Meyer discloses the method of claim 4 wherein  
said modifying comprises generating a metadata entry corresponding to said  
second virtualization device (Page 14, ¶0356 & Page 19, ¶0540 & ¶0543), and  
said metadata entry comprises said unique interconnect device identifier (Page  
19, ¶0540 & ¶0543).

As to claim 7, Meyer discloses the method of claim 3 further comprising:  
storing a volume map at said second virtualization device in response to said  
detecting, wherein said volume map is provided by said metadata host (Page 21,  
¶0619, lines 4-7).

As to claim 8 Meyer discloses the method of claim 3 wherein said unique  
interconnect device identifier comprises a Fibre Channel device identifier (Page 14,  
¶0347).

As to claim 9, Meyer discloses the method of claim 3 wherein said unique  
interconnect device identifier comprises at least one of a world wide node name and a  
world wide port name (Page 11, ¶0248).

As to claim 10, Meyer discloses the method of claim 3 wherein  
said first virtualization device comprises a first virtualization switch (Page 3,  
¶0056), and  
said second virtualization device comprises a second virtualization switch (Page  
3, ¶0056).

As to claim 11, Meyer discloses a machine-readable medium storing a plurality of  
instructions executable by a machine embodied therein, wherein said plurality of  
instructions when executed cause said machine to perform a method comprising:

detecting a failure of a first virtualization device of a storage area network  
interconnect (Page 5, ¶0093 & Table 1, VSX failing component), wherein

said storage area network interconnect is coupled to a metadata host, wherein  
said metadata host is configured to maintain metadata associated with said first  
virtualization device, and said metadata host is configured to monitor a heartbeat signal  
from a plurality, of virtualization devices (Page 2, ¶0054, lines 7-9 & Page 8, ¶0138-  
¶0144);

wherein said first virtualization device is associated with a unique interconnect  
device identifier (Page 13, ¶0334);

associating said unique interconnect device identifier with a second virtualization  
device of said storage area network interconnect in response to said detecting, wherein  
said associating comprises modifying said metadata (Page 8, ¶0149-¶0153 & Page 9,  
¶0185 & Page 14, ¶0356).

As to claim 12, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 11 wherein

said storage area network interconnect is coupled to an application host and to a storage device (Figure 25),

said first virtualization device is configured to present a virtual storage element to said application host using a host device identifier (Page 2, ¶0052, lines 3-12), and

said virtual storage element comprises at least a portion of said storage device (Page 2, ¶0052, lines 4-6).

As to claim 13, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 12 wherein

said second virtualization device is configured to present said virtual storage element to said application host using said host device identifier in response to said associating (Page 14, ¶0354-¶0356).

As to claim 14, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 13 wherein said monitoring comprises:

monitoring a communications link for a heartbeat signal from said first virtualization device (Page 18, ¶0503).

15. (Cancelled)

As to claim 16, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 14 wherein

said modifying comprises generating a metadata entry corresponding to said second virtualization device (Page 14, ¶0356 & Page 19, ¶0540 & ¶0543), and

said metadata entry comprises said unique interconnect device identifier (Page 19, ¶0540 & ¶0543).

As to claim 17, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 13, said method further comprising:

storing a volume map at said second virtualization device in response to said detecting, wherein said volume map is provided by said metadata host (Page 21, ¶0619, lines 4-7).

As to claim 18, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 13 wherein said unique interconnect device identifier comprises a Fibre Channel device identifier (Page 14, ¶0347).



As to claim 19, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 13 wherein said unique interconnect device identifier comprises at least one of a world wide node name and a world wide port name (Page 11, ¶0248).

As to claim 20, Meyer discloses the machine-readable medium storing a plurality of instructions executable by a machine embodied therein of claim 13 wherein  
said first virtualization device comprises a first virtualization switch (Page 3, ¶0056), and  
said second virtualization device comprises a second virtualization switch (Page 3, ¶0056).

As to claim 21, Meyer discloses a data processing system comprising:  
means for detecting a failure of a first virtualization device of a storage area network interconnect (Page 5, ¶0093 & Table 1, VSX failing component),  
wherein said first virtualization device is associated with a unique interconnect device identifier (Page 13, ¶0334),  
said storage area network interconnect is coupled to an application host, a metadata host and to a storage device (Figure 25),  
said metadata host is configured to maintain metadata associated with a virtual storage element (Page 14, ¶0356),

said metadata host is configured to monitor a a heartbeat signal from a plurality, of virtualization devices, said first virtualization device is configured to present said virtual storage element to said application host using a host device identifier (Page 2, ¶0054, lines 7-9 & Page 8, ¶0138-¶0144), and

said virtual storage element comprises at least a portion of said storage device (Page 2, ¶0052, lines 4-6); and

means for associating said unique interconnect device identifier with a second virtualization device of said storage area network interconnect coupled to said means for detecting, wherein said associating comprises modifying said metadata (Page 8, ¶0149-¶0153 & Page 9, ¶0185 & Page 14, ¶0356).

As to claim 22, Meyer discloses the data processing system of claim 21 wherein said second virtualization device is configured to present said virtual storage element to said application host using said host device identifier in response to said associating (Page 14, ¶0354-¶0356).

As to claim 23, Meyer discloses the data processing system of claim 22 wherein said means for detecting comprises:

means for monitoring a communications link for a heartbeat signal from said first virtualization device (Page 18, ¶0503).

24. (Cancelled)

As to claim 25, Meyer discloses the data processing system of claim 22 wherein said unique interconnect device identifier comprises a Fibre Channel device identifier (Page 14, ¶0347).

As to claim 26, Meyer discloses the data processing system of claim 22 wherein said unique interconnect device identifier comprises at least one of a world wide node name and a world wide port name (Page 11, ¶0248).

As to claim 27, Meyer discloses the data processing system of claim 22 wherein said first virtualization device comprises a first virtualization switch (Page 3, ¶0056), and

said second virtualization device comprises a second virtualization switch (Page 3, ¶0056).

As to claim 28, Meyer discloses a data processing system comprising:  
a metadata host wherein the metadata host comprises:  
a monitor module to monitor a communications link for a heartbeat signal from a first virtualization device of a storage area network interconnect, wherein said first virtualization device is associated with a unique interconnect device identifier (Page 2, ¶0054, lines 7-9 & Page 8, ¶0138-¶0144); and

a failover module coupled to said monitor module to detect a failure of said first virtualization device and to associate said unique interconnect device identifier with a second virtualization device of said storage area network interconnect in response to said detecting (Page 8, ¶0149-¶0153 & Page 9, ¶0185 & Page 14, ¶0356).

As to claim 29, Meyer discloses the data processing system of claim 28 wherein said storage area network interconnect is coupled to an application host and to a storage device (Figure 25),

said first virtualization device is configured to present a virtual storage element to said application host using a host device identifier (Page 2, ¶0052, lines 3-12), and

said virtual storage element comprises at least a portion of said storage device (Page 2, ¶0052, lines 4-6).

As to claim 30, Meyer discloses the data processing system of claim 29 wherein said second virtualization device is configured to present said virtual storage element to said application host using said host device identifier following a failure of said first virtualization device (Page 14, ¶0354-¶0356).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES EHNE whose telephone number is (571)272-2471. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CE  
03/17/2008

/Yolanda L Wilson/  
Primary Examiner, Art Unit 2113